

**OPTICAL COMMUNICATION APPARATUS AND METHODS USING  
LIGHT PULSES HAVING MODIFIED PROPAGATION SPEEDS**

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Abstract of the Disclosure

An improved apparatus and method for enhancing the performance of optical  
10 transmission and network systems (such as SONET or SDH). A magnetically trapped  
atomic cloud chamber is provided which selectively alters the group velocity of light  
waves propagating through the atomic cloud. A delay device, repeater, pulse shaper, and  
millimeter wave transmission system incorporating the chamber are also disclosed.

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